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Complex Formation between Fe(II) and 8-Mercaptoquinoline and Some of Its 5-Substituted Derivatives on Iron(III) Hexacyanoferrate(II) Gelatin-immobilized Matrices

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Abstract

Reactions of complex formation in iron(III) hexacyanoferrate(II) gelatin-immobilized matrices, which proceed during their contact with aqueous solutions of 8-mercaptoquinoline and its 5-methyl, 5-methylthio, and 5-bromo derivatives in alkaline medium (pH -12.0) are studied. It is found that incorporation of these ligands into the coordination sphere is preceded by the decomposition of the immobilized compound KFe[Fe(CN)6] to form hydroxides or oxohydroxides of iron(II) and iron(III) under the action of OHions. It is shown that Fe(II) → Fe(III) redox process and the formation of FeL3 chelate complexes of iron(III) (HL is unsubstituted or 5-substituted 8-mercaptoquinoline) take place during complex formation.